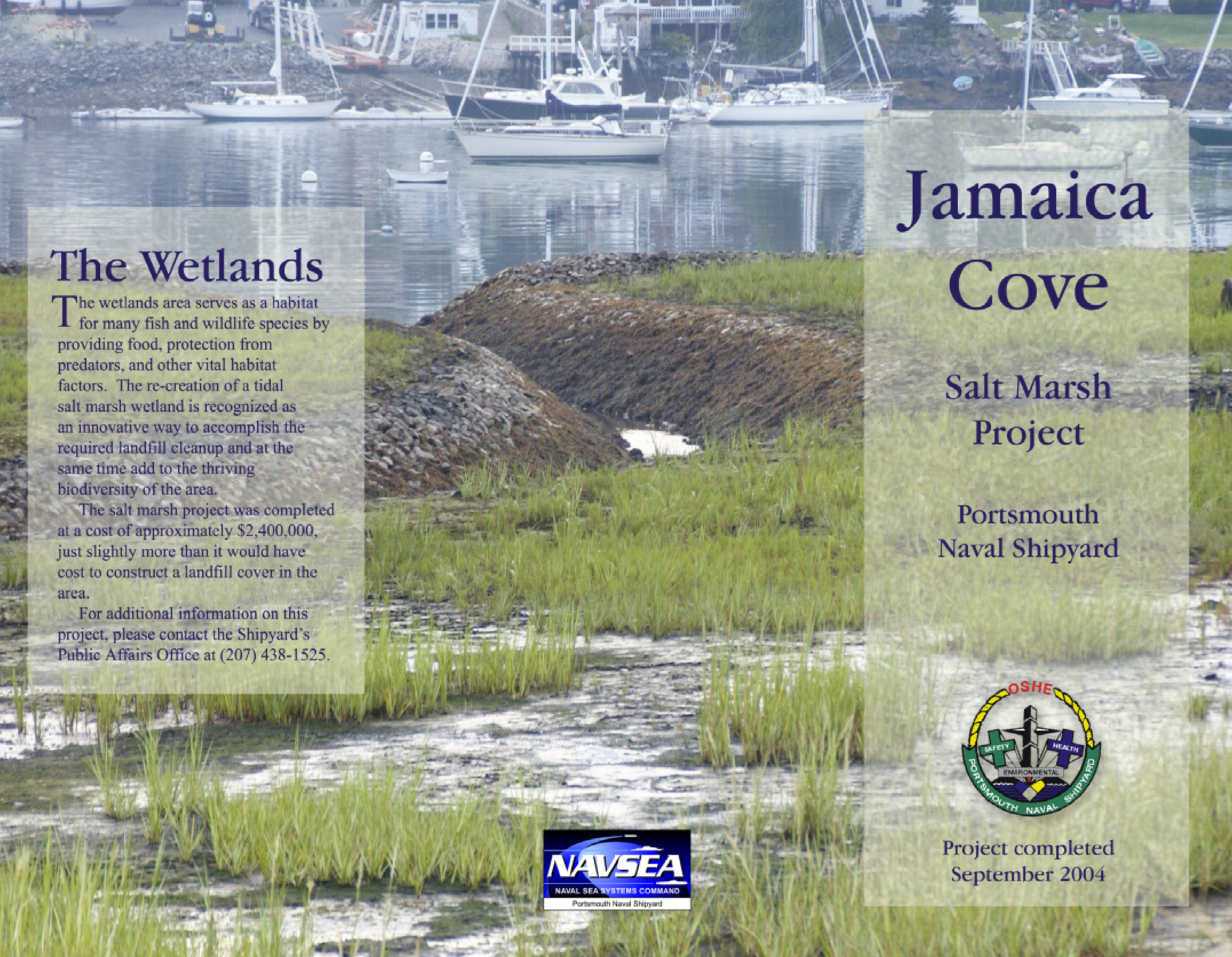

The Wetlands

The wetlands area serves as a habitat for many fish and wildlife species by providing food, protection from predators, and other vital habitat factors. The re-creation of a tidal salt marsh wetland is recognized as an innovative way to accomplish the required landfill cleanup and at the same time add to the thriving biodiversity of the area.

The salt marsh project was completed at a cost of approximately $2,400,000, just slightly more than it would have cost to construct a landfill cover in the area.

For additional information on this project, please contact the Shipyard's Public Affairs Office at (207) 438-1525.

Jamaica Cove

Salt Marsh Project

Portsmouth Naval Shipyard

NAVSEA
NAVAL SEA SYSTEMS COMMAND
Portsmouth Naval Shipyard

OSHE
SAFETY
HEALTH
ENVIRONMENTAL
PORTSMOUTH NAVAL SHIPYARD

Project completed September 2004

Jamaica Cove Salt Marsh

After three years, the wetlands continue to thrive with an estimated coverage of 75 to 80%.

In conjunction with the clean up action for the Jamaica Island landfill at Portsmouth Naval Shipyard, a two acre salt marsh was constructed in 2002/2003 where there was once a landfill. A two and a half acre section of the landfill was excavated and consolidated on the other portion of the landfill where it was placed under the multi-layered hazardous waste landfill cover system. By excavating down to one foot below the underlying original tidal mudflat, approximately 43,000 cubic yards of waste were removed. Within the excavated area, a salt marsh was established.

Approximately 900 linear feet of rock protection was placed along the backside of the cove to minimize erosion during storm events and a protective rock berm was constructed to minimize impact from wave action in the cove. A channel through the berm allows water to flow into the cove during high tide and fully drain during low tide thereby creating the habitat to support the growth of salt marsh plants. Approximately 33,000 tons of backfill materials were brought in to raise the elevation in Jamaica Cove necessary to support the establishment of the salt marsh.

In June 2003, 32,500 low marsh plants, smooth cordgrass (*Spartina alterniflora*) and 2,500 high marsh plants [salt hay grass (*Spartina patens*) and spike grass (*Distichlis spicata*)] were planted in the appropriate zones. The low marsh zone elevations were set from 2.5 feet to 4.3 feet above sea level with the high marsh zone from elevation 4.3 feet to 5 feet above sea level. The plants were placed in rows, 18 inches on center. Good growth of both the high and low marsh plants was seen throughout the first growing season in 2003.

Rockweed (*Fucus vesiculosus*) became well established within the central channel and along the edges of the outer berm. Along the upper edge of the shoreline, native trees and shrubs, appropriate to the area, were planted to mimic a naturally occurring salt marsh.

Unfortunately, none of the high marsh plants survived the unusually harsh winter of 2003/2004. The winter featured extreme temperatures well below normal, repeated freeze/thaw cycles and a lack of precipitation, which most likely affected the transplanted high marsh plants which are more sensitive than well established plants. An inspection of the salt marsh in July 2004 indicated about 40% of the low marsh plants (*Spartina alterniflora*) survived the first winter. These plants were concentrated over approximately 20% of the low marsh zone. Naturally recruited early succession plants such as common glasswort (*Salicornia europaea*) and seablite (*Suaeda maritima*) and (*Suaeda linearis*) were seen. Glasswort, seen in the lower portion of the high marsh zone, covered about 15 - 20% of the surface and seablite, seen in middle portion of the high marsh zone, covered an additional 15 - 20%. To enhance and expedite the natural development of the wetlands, an additional 1,800 low marsh plants (*Spartina alterniflora*) were replanted along with 200 high marsh species (*Spartina patens and Distichlis spicata*) in August 2004.

After three years, the wetlands continue to thrive with an estimated coverage of 75 to 80%. The cordgrass continues to spread and go to seed. Invasive species, in particular the common reed (*Phragmites australis*) are not present in the salt marsh.